



**STATE OF HAWAII
DEPARTMENT OF HEALTH**

Disaster Recovery Safety

Handwashing in Emergency Situations

After an emergency, it can be difficult to find running water. However, it is still important to wash your hands to avoid illness. It is best to wash your hands with soap and water but when water isn't available, you can use alcohol-based products made for hand washing.

How to Make Sure Your Water Is Safe

Hurricanes, especially if accompanied by a tidal surge or flooding, can contaminate the public water supply. Drinking contaminated water may cause illness. You cannot assume that the water in the hurricane-affected area is safe to drink.

Listen for public announcements about the safety of the municipal water supply. Use bottled water for eating or drinking. If you do not have bottled water, and are not sure that your tap water is safe, follow these directions to purify tap water:

- Boil the water vigorously (water should be bubbling and rolling) for 1 minute.
- If you can't boil water, add 6 drops of newly purchased, unscented liquid household bleach per gallon of water, stir it well, and then let the water stand for 30 minutes before you use it. Note that using bleach will not kill parasitic organisms.
- You also can use water-purifying tablets from your local pharmacy or sporting goods store.

Do not allow children to play in floodwater areas. Wash children's hands frequently (always before meals), and do not allow children to play with floodwater-contaminated toys that have not been disinfected. You can disinfect toys using a solution of one cup of bleach in five gallons of water.

How to Perform First Aid for Injuries

First aid is extremely important when exposure to waters potentially contaminated with human, animal, or toxic wastes.

- Immediately clean out all open wounds and cuts with soap and clean water.
- Apply an antibiotic ointment to discourage infection.
- If a wound develops redness, swelling, or drainage, seek immediate medical attention.
- If you are injured, contact a physician to determine the necessary type of treatment (for example, need for tetanus shot).

Wear Protective Gear

For most work in flooded areas, wear hard hats, goggles, heavy work gloves, and watertight boots with steel toe and insole (not just steel shank).

Wear earplugs or protective headphones to reduce risk from equipment noise.

Equipment such as chain saws, backhoes, and dryers may cause ringing in the ears and subsequent hearing damage.

Beware of Electrical Hazards

- If water has been present anywhere near electrical circuits and electrical equipment, turn off the power at the main breaker or fuse on the service panel. Do not turn the power back on until electrical equipment has been inspected by a qualified electrician.
- Never enter flooded areas or touch electrical equipment if the ground is wet, unless you are certain that the power is off. NEVER handle a downed power line.
- When using gasoline and diesel generators to supply power to a building, switch the main breaker or fuse on the service panel to the "off" position prior to starting the generator.
- If clearing or other work must be performed near a downed power line, contact the utility company to discuss de-energizing and grounding or shielding of power lines. Extreme caution is necessary when moving ladders and other equipment near overhead power lines to avoid inadvertent contact.

Be Prepared for Fires

Fire can pose a major threat to an already badly damaged flood area for several reasons:

- Inoperative fire protection systems.
- Hampered fire department response.
- Inoperable firefighting water supplies.
- Flood-damaged fire protection systems.

At least two fire extinguishers, each with a UL rating of at least 10A, should be provided at every cleanup job.

Avoid Carbon Monoxide

Hurricanes often cause power outages. Indoor use of portable generators, charcoal grills, or camp stoves can lead to carbon monoxide poisoning. Carbon monoxide is an odorless, colorless gas that is poisonous to breathe. During flood cleanup, operate all gasoline-powered devices such as pumps, generators, and pressure washers outdoors and never bring them indoors. This will help to ensure your safety from carbon monoxide poisoning.

Prevent Musculoskeletal Injury

Special attention is needed to avoid back injuries associated with manual lifting and handling of debris and building materials. To help prevent injury:

- Use teams of two or more to move bulky objects.
- Avoid lifting any material that weighs more than 50 pounds (per person)
- Use proper automated-assist lifting devices

Reduce Risk of Thermal Stress

While cleaning up after the hurricane, you are at risk for developing health problems from working in hot or cold environments. **To reduce heat-related risks:**

- Drink a glass of fluid every 15 to 20 minutes.
- Wear light-colored, loose-fitting clothing
- Work during the cooler hours of the day.

Prevent Fatigue-Related Injuries

Continued long hours of work, combined with exhaustion, can create a highly stressful situation during cleanup. People working on hurricane and flood cleanup can reduce their risks of injury and illness in several ways:

- Set priorities for cleanup tasks and pace the work. Avoid physical exhaustion.
- Resume a normal sleep schedule as quickly as possible.
- Be alert to emotional exhaustion or strain. Consult family members, friends or professionals for emotional support.

Beware of Structural Instability

Never assume that water-damaged structures or ground are stable. Buildings that have been submerged or have withstood rushing flood waters may have suffered structural damage and could be dangerous.

- Don't work in or around any flood-damaged building until it has been examined and certified as safe for work by a registered professional engineer or architect.
- Assume all stairs, floors, and roofs are unsafe until they are inspected.

- Leave immediately if shifting or unusual noises signal a possible collapse.

Avoid Hazardous Materials

Flood waters can dislodge tanks, drums, pipes, and equipment, which may contain hazardous materials such as pesticides or propane.

- Do not attempt to move unidentified dislodged containers without first contacting the local fire department or hazardous materials team.
- If working in potentially contaminated areas, avoid skin contact or inhalation of vapors by wearing appropriate protective clothing and respirators.
- Frequently and thoroughly wash skin areas that may have been exposed to pesticides and other hazardous chemicals.
- Contact NIOSH for more information on the proper safety equipment.

Dealing with Wild and Domestic Animals in a Disaster

Be cautious of wild or stray animals. They may be disoriented and dangerous following a hurricane or flood. Try to confine the animal without getting at risk of being bitten. Call the Animal Control agency in your county.

Wild and domestic animals may escape or be killed in disasters. Escaped animals may wander onto land where they could:

- contaminate water supplies
- cause a build-up of manure
- overgraze sensitive ecosystems
- cause damage to crops

Decaying carcasses create biologic waste and attract flies and rodents, which can spread disease. They may also contaminate groundwater and cause bad odors.

Animal carcasses should be disposed of as soon as possible to avoid creating a health hazard to animals or humans.

Contact animal control department or the Hawaii State Department of Health for specific disposal guidance.